

CLAIMS

The invention claimed is

1. A method comprising:
 - receiving data regarding an aircraft;
 - displaying in an indicated airspeed (IAS) area of a display an IAS indicator to indicate IAS of the aircraft;
 - displaying in a flight path angle (FPA) area of the display a FPA indicator to indicate a FPA of the aircraft, the FPA indicator and the IAS indicator being positioned relative to one another on the display to visually integrate the IAS area and the FPA area;
 - displaying a banked attitude indicator in an area of the display to indicate banked attitude of the aircraft, the banked attitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the banked attitude indicator with the FPA area;
 - displaying a predictive track indicator in a navigation area of the display to indicate direction of the aircraft, the predictive track indicator and the banked attitude indicator being positioned relative to one another to visually integrate the banked attitude indicator with the navigation area; and
 - displaying an altitude indicator in an altitude area of the display, the altitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the altitude area with the FPA area.

2. A computer-readable memory medium containing instructions for indicating flight situation of an aircraft by:
 - receiving data regarding the aircraft;
 - displaying in an indicated airspeed (IAS) area of a display an IAS indicator to indicate IAS of the aircraft;

displaying in a flight path angle (FPA) area of the display a FPA indicator to indicate a FPA of the aircraft, the FPA indicator and the IAS indicator being positioned relative to one another on the display to visually integrate the IAS area and the FPA area;

displaying a banked attitude indicator in an area of the display to indicate banked attitude of the aircraft, the banked attitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the banked attitude indicator with the FPA area;

displaying a predictive track indicator in a navigation area of the display to indicate direction of the aircraft, the predictive track indicator and the banked attitude indicator being positioned relative to one another to visually integrate the banked attitude indicator with the navigation area; and

displaying an altitude indicator in an altitude area of the display, the altitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the altitude area with the FPA area.

3. A system comprising:

means for receiving data regarding an aircraft;

means for displaying in an indicated airspeed (IAS) area of a display an IAS indicator to indicate IAS of the aircraft;

means for displaying in a flight path angle (FPA) area of the display a FPA indicator to indicate a FPA of the aircraft, the FPA indicator and the IAS indicator being positioned relative to one another on the display to visually integrate the IAS area and the FPA area;

means for displaying a banked attitude indicator in an area of the display to indicate banked attitude of the aircraft, the banked attitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the banked attitude indicator with the FPA area;

means for displaying a predictive track indicator in a navigation area of the display to indicate direction of the aircraft, the predictive track indicator and the

banked attitude indicator being positioned relative to one another to visually integrate the banked attitude indicator with the navigation area; and

means for displaying an altitude indicator in an altitude area of the display, the altitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the altitude area with the FPA area.

4. A display apparatus for an aircraft comprising:

a display,

an indicated airspeed (IAS) indicator, transmitted to and viewable on an IAS area of the display, representative of the indicated airspeed of the aircraft;

a flight path angle (FPA) indicator, transmitted to and viewable on an FPA area of the display, representative of a FPA of the aircraft, the FPA indicator and the IAS indicator being positioned relative to one another on the display to visually integrate the IAS area and the FPA area;

a banked attitude indicator transmitted to and viewable on the display, representative of the banked attitude of the aircraft, the banked attitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the banked attitude indicator with the FPA area;

a predictive track indicator, transmitted to and viewable on a navigation area of the display, representative of the direction of the aircraft in a navigation area to indicate direction of the aircraft, the predictive track indicator and the banked attitude indicator being positioned relative to one another to visually integrate the banked attitude indicator with the navigation area; and

an altitude indicator, transmitted to and viewable on an altitude area of the display, representative of the altitude of the aircraft, the altitude indicator and the FPA indicator being positioned relative to one another on the display to visually integrate the altitude area with the FPA area.

5. A method comprising:
receiving data regarding an aircraft;
displaying on a first portion of a display an air-mass referenced flight path angle (FPA) indicator to indicate FPA of the aircraft relative to air mass; and
displaying on a second portion of the display a ground-referenced FPA indicator to indicate FPA of the aircraft relative to ground.

6. The method of claim 5 further comprising displaying on a third portion of the display an altitude scale positioned on the display relative to a reference point on the display to indicate present altitude of the aircraft.

7. The method of claim 6 wherein the first portion of the display is positioned relative to the reference point when the air-mass referenced FPA indicator is displayed to indicated FPA of the aircraft relative to air-mass and the second portion of the display is positioned relative to the reference point when the ground referenced FPA indicator is displayed to indicate FPA of the aircraft relative to the ground.

8. The method of claim 7 further comprising displaying the reference point as a zero FPA demarcation.

9. The method of claim 5 wherein the air-mass referenced FPA indicator and the ground-referenced FPA indicator are displayed as sharing a common FPA scale having FPA demarcations including a zero FPA demarcation.

10. The method of claim 9 further comprising displaying on a third portion of the display an altitude scale, the third portion being positioned on the display such that the zero FPA demarcation is in line with a position on the altitude scale indicating present altitude of the aircraft.

11. The method of claim 5 wherein the data is received as generated data with the regarded aircraft being simulated.

12. The method of claim 5 wherein the data is received as flight data with the regarded aircraft being in physical flight.

13. The method of claim 12 wherein the flight data is received to include at least global position system (GPS) data.

14. A method comprising:
receiving data regarding an aircraft;
displaying on a first portion of a display an air-mass referenced FPA indicator to indicate FPA of the aircraft relative to air mass; and
displaying on a second portion of the display a potential air-mass referenced FPA indicator to indicate the amount of power being expended at a current thrust setting of the aircraft at a current airspeed.

15. The method of claim 14 wherein the air-mass referenced FPA indicator and the potential air-mass referenced FPA indicator are displayed as sharing a common FPA scale.

16. The method of claim 14 wherein the air-mass referenced FPA indicator and the potential air-mass referenced FPA indicator are displayed on the display such that position of the first portion of the display relative to position of the second portion of the display is associated with one of acceleration and deceleration of the aircraft.

17. The method of claim 14 further comprising displaying on a third portion of the display a ground-referenced FPA indicator to indicate FPA of the aircraft relative to ground.

18. The method of claim 17 wherein the air-mass referenced FPA indicator, the potential air-mass referenced FPA indicator, and the ground-referenced FPA indicator are displayed as sharing a common FPA scale.

19. A method comprising:
receiving data regarding an aircraft;
displaying on a first portion of a display a ground referenced FPA indicator to indicate FPA of the aircraft relative to ground; and
displaying on a second portion of the display a predictive track indicator to indicate direction of flight of the aircraft.

20. A method comprising:
receiving data regarding an aircraft;
displaying on a first portion of a display an air-mass referenced FPA indicator to indicate FPA of the aircraft relative to air mass; and
displaying on a second portion of the display an indicated airspeed (IAS) scale position relative to the air-mass referenced FPA indicator according to present IAS of the aircraft.

21. A method comprising:
receiving data regarding an aircraft;
displaying on a first portion of a display an aircraft symbol in an outside-in fashion to indicate banked attitude of the aircraft; and
displaying on a second portion of the display a predictive track indicator to indicate direction of flight of the aircraft, the second portion of the display being positioned with the predictive track indicator in alignment with the aircraft symbol.

22. The method of claim 21 further comprising displaying a geographic map associated with an area below the aircraft in the second portion of the display.

23. The method of claim 21 further comprising displaying a runway symbol on a third portion of the display to indicate a desired destination runway relative to present direction of flight of the aircraft as indicated by the predictive track indicator and displaying an FPA scale on a fourth portion of the display, the third portion and the fourth portion of the display positioned relative to one another to indicate present potential glide slope of the aircraft.

24. A method comprising:

- receiving data regarding an aircraft;
- displaying on a first portion of the display a predictive track indicator to indicate direction of flight of the aircraft;
- displaying a runway symbol on a second portion of the display to indicate a destination runway relative to present direction of flight of the aircraft as indicated by the predictive track indicator;
- displaying an FPA scale on a third portion of the display, the second portion and the third portion of the display positioned relative to one another so that an indicative portion of the runway symbol is aligned with a position on the FPA scale to indicate present potential glide slope of the aircraft;
- displaying an approach indicator positioned relative to the FPA scale to indicate a desired ground referenced FPA for approach of the aircraft to the destination runway; and
- initiating an alert when the indicative portion of the runway symbol becomes aligned with the approach indicator thereby indicating that the present potential glide slope of the aircraft is the desired ground referenced FPA for approach as indicated by the approach indicator.

25. A method comprising:

- receiving data regarding an aircraft;
- displaying on a first portion of a display a FPA scale with FPA demarcations; and

displaying on a second portion of the display an aircraft symbol in an outside-in fashion to indicate banked attitude of the aircraft, the second portion being positioned on the display to align the aircraft symbol with the FPA scale to indicate a present ground referenced FPA of the aircraft.

26. The method of claim 25 further comprising displaying on a third portion of the display a predictive track indicator to indicate direction of flight of the aircraft, the third portion of the display being positioned with the predictive track indicator in alignment with the aircraft symbol.